CHEMISTRY

BOOKS - ICSE

THE LANGUAGE OF CHEMISTRY

Example

1. Balance the following equation

$$Cu + H_2SO_4 \rightarrow CuSO_4 + SO_2 + H_2O$$

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2. Balance the following skeleton equation.

$$As_2O_3 + SnCl_2 + HCl \rightarrow SnCl_4 + As + H_2O$$

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3. Balance the following skeletal equation:

$$Fe + H_2O \rightarrow Fe_2O_3 + H_2$$

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4. Ammonia, calcium chloride and water are obtained by heating a mixture of ammonium chloride and calcium hydroxide.

Write a balanced equation of the reaction.

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5. Potassium dichromate reacts with hydrochloric acid to produce potassium chloride, chromium chloride, water and chlorine.

Write the skeletal equation of the reaction and balance it.

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6. Calculate the relative molecular masses (or molecular weights) of the following compounds : Cane sugar , $C_{12}H_{22}O_{11}$

Given that the relative atomic mass (in amu) of Cu = 63.5 , S=32 , O=16 , N=14 , C=12

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7. Calculate the relative molecular masses (or molecular weights), of the following compounds :

Copper sulphate crystals, $CuSO_4.5H_2O$

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8. Calculate the relative molecular masses (or molecular weights) of the following compounds: Ammonium sulphate, $(NH_4)_2SO_4$

Given that the relative atomic masses (in amu) of Cu = 63.5, S = 32, O = 16, N= 14 and C = 12

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9. Calculate percentage of hydrogen in water

Given that the relative atomic masses in amu of H = 1, 0 = 16.

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10. Calculate the percentage of nitrogen in urea NH_2CONH_2.

Given : R.M.M. of N = 14, C = 12 , O = 16, H = 1 ?

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11. Calculate the percentage composition of various elements in :

Sodium carbonate, Na_2CO_3

Given that the relative atomic masses of O = 16, Na = 23 and C = 12.

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12. Find the percentage mass of water in washing soda crystals `Na_2CO_3 , 10H_2O.

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Excercise 1 A

1. What is a symbol ? What information does it convey ?

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2. Why is the symbol S for sulphur, but Na for sodium and Si for silicon ?

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3. Write the full form of IUPAC. Name the elements represented by the following symbol Au.

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4. Write the full form of IUPAC. Name the elements represented by the following symbol Pb.

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5. Write the full form of IUPAC. Name the elements represented by the following symbol Sn.

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6. Write the full form of IUPAC. Name the elements represented by the following symbol Hg.

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7. If the symbol for Cobalt, Co, were written as CO, what would be wrong with it?

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8. What do the following symbol stand for H ?

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9. What do the following symbol stand for H_2?

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10. What do the following symbol stand for $2H$?

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11. What do the following symbol stand for $2H_2$?

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12. What is meant by atomicity ? Name a diatomic element.

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13. Explain the terms 'valency' and 'variable valency'.

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14. How are the elements with variable valency named ? Explain with an example.

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15. Give the formula and valency of : aluminate _____

_____

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16. Give the formula and valency of : chromate _____

_____

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17. Give the formula and valency of : aluminium_____

_____

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18. Give the formula and valency of : cupric _____ _____

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19. What is a chemical formula?

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20. What is the significance of a formula ? Give an example to illustrate.

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21. What do you understand by the Acid radical ?

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22. What do you understand by the Basic radical?

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23. Select the basic and acidic radicals in the $MgSO_4$.

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24. Select the basic and acidic radicals in the $(NH_4)_2SO_4$.

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Watch Video Solution

25. Select the basic and acidic radicals in the $Al_2(SO_4)_3$.

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26. Select the basic and acidic radicals in the $ZnCO_3$.

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27. Select the basic and acidic radicals in the $Mg(OH)_2$.

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28. Write chemical formulae of the sulphates of Aluminium, Ammonium and Zinc.

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29. The valency of an element A is 3 and that of element B is 2. Write the formula of the compound formed by the combination of A and B.

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30. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Barium sulphate.

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31. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Bismuth nitrate.

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32. Write the basic redicals and acidic radicats of the following and then write the chemical formulae of Calcium bromide.

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33. Write the basic redicals and acidic radicats of the following and then write the chemical formulae of Ferrous sulphide.

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34. Write the basic redicals and acidic radicats of the following and then write the chemical formulae of Chromium sulphate.

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35. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Calcium

silicate.

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36. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Stannic oxide.

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37. Write the basic redicals and acidic radicats of the following and then write the chemical formulae of Sodium zincate.

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38. Write the basic radicals and acidic radicals of the following and then write the chemical formulae of Magnesium phosphate.

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39. Write the basic redicals and acidic radicats of the following and then write the chemical formulae of Sodium thiosulphate.

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40. Write the basic redicals and acidic radicats of the following and then write the chemical formulae of Stannic

phosphate.

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41. Write the basic redicals and acidic radicats of the following and then write the chemical formulae of Nickel bisulphate.

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42. Write the basic redicals and acidic radicats of the following and then write the chemical formulae of Potassium manganate.

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43. Write the basic redicals and acidic radicats of the following and then write the chemical formulae of Potassium ferroxyanide.

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44. Write the chemical name of the $Ca_3(PO_4)_2$?

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45. Write the chemical name of the K_2CO_3 ?

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46. Write the chemical name of the K_2MnO_4 ?

Watch Video Solution

47. Write the chemical name of the $Mn_3(BO_3)_2$?

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48. Write the chemical name of the `Mg(HCO_3)_2 ?

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49. Write the chemical name of the $Na_4Fe(CN)_6$?

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Watch Video Solution

50. Write the chemical name of the $Ba(ClO_3)_2$?

Watch Video Solution

51. Write the chemical name of the Ag_2SO_3 ?

Watch Video Solution

52. Write the chemical name of the $(CH_3COO)_2Pb$?

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53. Write the chemical name of the Na_2SiO_3 ?

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54. Give the name of the $KClO$?

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55. Give the name of the $KClO_2$?

Watch Video Solution

56. Give the name of the $KClO_3$?

Watch Video Solution

Watch Video Solution

57. Give the name of the $KClO_4$?

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58. The formula of a compound represents

A. an atom

B. a particle

C. a molecule

D. a combination.

Answer:

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59. The correct formula of aluminium oxide is

A. AlO_3

B. AlO_2

C. Al_2O_3

D. Al_3O_2

Answer:

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60. Complete the following statements by selecting the correct option:

The valency of nitrogen in nitrogen dioxide (NO_2) is

A. one

B. two

C. three

D. four.

Answer:

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61. Give the name of the elements and number of atom of those elements, present in the following compound.

Sodium sulphate

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62. Give the name of the elements and number of atom of those elements, present in the following compound.

Quick lime

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63. Give the name of the elements and number of atom of those elements, present in the following compound.

Baking soda $(NaHCO_3)$

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64. Give the name of the elements and number of atom of those elements, present in the following compound.

Ammonia

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65. Give the name of the elements and number of atom of those elements, present in the following compound.

Ammonium dichromate

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66. The formula of the sulphate of an element M is $M_2(SO_4)_3$. Write the formula of its Chloride.

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67. The formula of the sulphate of an element M is $M_2(SO_4)_3$. Write the formula of its Oxide.

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68. The formula of the sulphate of an element M is $M_2(SO_4)_3$. Write the formula of its Phosphate.

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69. The formula of the sulphate of an element M is $M_2(SO_4)_3$. Write the formula of its Acetate.

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Excercise 1 B

1. What is a chemical equation? Why it is necessary to balance it?

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2. State the information conveyed by the following equation.

$Zn(s) + 2HCl(aq) \rightarrow ZnCl_2(aq) + H_2 \uparrow$

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3. What is the limitation of the reaction given

$Zn(s) + 2HCl(aq) \rightarrow ZnCl_2(aq) + H_2 \uparrow$

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4. Write a chemical equation for the following word equation and balance them.

Carbon + Oxygen $\rightarrow$ Carbon dioxide

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5. Write chemical equation for the following word equation and balance them.

Nitrogen + Oxygen $\rightarrow$ Nitrogen monoxide

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6. Write chemical equation for the following word equation and balance them.

Calcium + Nitrogen $\rightarrow$ Calcium nitride

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7. Write chemical equation for the following word equation and balance them.

Calcium oxide + Carbon dioxide $\rightarrow$ Calcium carbonate

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8. Write chemical equation for the following word equation and balance them.

Magnesium + Sulphuric acid $\rightarrow$ Magnesium sulphate + Hydrogen

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9. Write the balanced equation for the following chemical reactions.

(i) Hydrogen + Chlorine $\rightarrow$ Hydrogen chloride

(ii) Barium chloride + Aluminium sulphate $\rightarrow$ Barium sulphate + Aluminium chloride

(iii) Sodium + Water $\rightarrow$ Sodium hydroxide + Hydrogen

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10. Balance the following equation :

$Fe + H_2O \rightarrow Fe_3O_4 + H_2$

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11. Balance the following equation :

$Ca + N_2 \rightarrow Ca_3N_2.$

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12. Balance the following equation :

$Zn + KOH \rightarrow K_2ZnO_2 + H_2$

Watch Video Solution

13. Balance the following equation :

$Fe_2O_3 + CO \rightarrow Fe + CO_2.$

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14. Balance the following equation :

$PbO + NH_3 \rightarrow Pb + H_2O + N_2.$

Watch Video Solution

15. Balance the following equation :

$Pb_3O_4 \rightarrow PbO + O_2.$

Watch Video Solution

16. Balance the following equation :

$PbS + O_2 \rightarrow PbO + SO_2.$

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17. Balance the following equation :

$S + H_2SO_4 \rightarrow SO_2 + H_2O.$

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18. Balance the following equation :

$MnO_2 + HCl \rightarrow MnCl_2 + H_2O + Cl_2.$

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19. Balance the following equation :

$C + H_2SO_4 \rightarrow CO_2 + H_2O + SO_2.$

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20. Balance the following equation :

$KOH + Cl_2 \rightarrow KCl + KClO + H_2O.$

Watch Video Solution

21. Balance the following equation :

$NO_2 + H_2O \rightarrow HNO_2 + HNO_3.$

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22. Balance the following equation :

$Pb_3O_4 + HCl \rightarrow PbCl_2 + H_2O + Cl_2.$

Watch Video Solution

23. Balance the following equation :

$H_2O + Cl_2 \rightarrow HCl + O_2.$

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24. Balance the following equation :

$NaHCO_3 \rightarrow Na_2CO_3 + H_2O + CO_2.$

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25. Balance the following equation :

$HNO_3 + H_2S \rightarrow NO_2 + H_2O + S.$

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26. Balance the following equation :

$P + HNO_3 \rightarrow NO_2 + H_2O + H_3PO_4.$

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27. Balance the following equation :

$Zn + HNO_3 \rightarrow Zn(NO_3)_2 + H_2O + NO_2.$

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Excercise 1 C Fill In The Blanks

1. Dalton used symbol ..... for oxygen and ..... for hydrogen.

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2. Symbol represents .....atom of an element.

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3. Symbolic expression for a molecule is called ..... .

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4. Sodium chloride has two radicals. Sodium is a ..... adical while chloride is a ..... radical.

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5. Oxidation state of phosphorus in PCl_3 is ..... and in PCl_5 is ..... .

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6. Valency of Iron in $FeCl_2$ is ..... and in $FeCl_3$ it is ..... .

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7. Formula of iron (III) carbonate is .....

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Excercise 1 C

1. Complete the following table :

S.No.	Molecular formula	Condensed formula	Structural formula	Common name
1.	HCHO			
2.	CH_3COOH			
3.	CH_3OH			
4.	CH_3CHO			
5.	C_2H_5OH			
6.	C_2H_2			

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2. Sodium chloride reacts with silver nitrate to produce silver chloride and sodium nitrate

Write the equation.

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3. Sodium chloride reacts with silver nitrate to produce silver chloride and sodium nitrate

Check whether it is balanced, if not balance it.

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4. Sodium chloride reacts with silver nitrate to produce silver chloride and sodium nitrate

Find the weights of reactants and products.

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5. Sodium chloride reacts with silver nitrate to produce silver chloride and sodium nitrate

State the law that this equation satisfies.

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6. What information does the following chemical equations convey?

$Zn + H_2SO_4 \rightarrow ZnSO_4 + H_2$

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7. What information does the following chemical equations convey?

$Mg + 2HCl \rightarrow MgCl_2 + H_2$

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8. What are poly atomic ions? Give two examples?

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9. Name the fundamental law that is involved in every equation.

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10. What is the valency of :

fluorine in CaF_2

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11. What is the valency of :

sulphur in SF_6

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12. What is the valency of :

phosphorus in PH_3

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13. What is the valency of carbon?

Watch Video Solution

14. What is the valency of :

nitrogen in the N_2O_3

Watch Video Solution

15. What is the valency of :

nitrogen in the N_2O_5.

Watch Video Solution

16. What is the valency of :

nitrogen in the NO_2

Watch Video Solution

17. What is the valency of :

nitrogen in the NO

Watch Video Solution

18. What is the oxidation state of :

Manganese in MnO_2

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19. What is the oxidation state of :

Copper is Cu_2O

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20. What is the oxidation state of :

Magnesium in Mg_3N_2.

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21. Why should an equation be balanced ? Explain with the help of a simple equation.

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22. Write the balanced chemical equation of the following word equation.

Sodium hydroxide + sulphuric acid $\rightarrow$ sodium sulphate + water

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23. Write the balanced chemical equation of the following word equation.

Potassium bicarbonate + sulphuric acid $\rightarrow$ potassium sulphate + carbon dioxide + water

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24. Write the balanced chemical equation of the following word equation.

Iron + sulphuric acid $\rightarrow$ ferrous sulphate + hydrogen

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25. Write the balanced chemical equation of the following word equation.

Chlorine + sulphur dioxide + water $\rightarrow$ sulphuric acid + hydrogen chloride

Watch Video Solution

26. Write the balanced chemical equation of the following word equation.

Silver nitrate $\rightarrow$ silver + nitrogen dioxide + oxygen

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27. Write the balanced chemical equation of the following word equation.

Copper + nitric acid $\rightarrow$ copper nitrate + nitric oxide + water

Watch Video Solution

28. Write the balanced chemical equation of the following word equation.

Ammonia + oxygen $\rightarrow$ nitric oxide + water

Watch Video Solution

29. Write the balanced chemical equation of the following word equation.

Barium chloride + sulphuric acid $\rightarrow$ barium sulphate + hydrochloric acid

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30. Write the balanced chemical equation of the following word equation.

Zinc sulphide + oxygen $\rightarrow$ zinc oxide + sulphur dioxide

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31. Write the balanced chemical equation of the following word equation.

Aluminium carbide + water $\rightarrow$ aluminium hydroxide + methane

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32. Write the balanced chemical equation of the following word equation.

Iron pyrites (FeS_2) + oxygen $\rightarrow$ ferric oxide + sulphur dioxide

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33. Write the balanced chemical equation of the following word equation.

Potassium permanganate+ hydrochloric acid $\rightarrow$ potassium chloride + manganese chloride + chlorine + water

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34. Write the balanced chemical equation of the following word equation.

Aluminium sulphate + sodium hydroxide $\rightarrow$ sodium sulphate + sodium meta aluminate + water

Watch Video Solution

35. Write the balanced chemical equation of the following word equation.

Aluminium + sodium hydroxide + water $\rightarrow$ sodium meta aluminate + hydrogen

Watch Video Solution

36. Write the balanced chemical equation of the following word equation.

Potassium dichromate + sulphuric acid $\rightarrow$ potassium sulphate + chromium sulphate + water + oxygen

Watch Video Solution

37. Write the balanced chemical equation of the following word equation.

Potassium dichromate + hydrochloric acid $\rightarrow$ potassium chloride + chromium chloride + water + chlorine

Watch Video Solution

38. Write the balanced chemical equation of the following word equation.

Sulphur + nitric acid $\rightarrow$ sulphuric acid + nitrogen dioxide + water

Watch Video Solution

39. Write the balanced chemical equation of the following word equation.

Sodium chloride + manganese dioxide + sulphuric acid $\rightarrow$ sodium hydrogen sulphate + manganese sulphate + water + chlorine

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40. Define atomic mass unit.

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41. Calculate the molecular mass of the $N_2SO_4.\ 10H_2O$

Given atomic mass of Na = 23, H = 1, O = 16, C = 12, N = 14, Mg = 24, S = 32

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42. Calculate the molecular mass of the $(NH_4)_2CO_3$.

Given atomic mass of Na = 23, H = 1, O = 16, C = 12, N = 14, Mg = 24, S = 32

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43. Calculate the molecular mass of the $(NH_2)_2CO$

Given atomic mass of Na = 23, H = 1, O = 16, C = 12, N = 14, Mg = 24, S = 32

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44. Calculate the molecular mass of the Mg_3N_2.

Given atomic mass of Na = 23, H = 1, O = 16, C = 12, N = 14, Mg = 24, S = 32

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Excercise 1 C Choose The Correct Answer

1. Modern atomic symbols are based on the method proposed by

A. Bohr

B. Dalton

C. Berzelius

D. Alchemist

Answer:

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2. The number of carbon atoms in a hydrogen carbonate radical is

A. one

B. two

C. three

D. four

Answer:

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3. The formula of iron (III) sulphate is

A. Fe_3SO_4

B. $Fe(SO_4) - 3$

C. $Fe_2(SO_4)_3$

D. $FeSO_4$

Answer:

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4. In water, the hydrogen-to-oxygen mass ratio is

A. $1:8$

B. $1:16$

C. $1:32$

D. $1:64$

Answer:

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5. The formula of sodium carbonate is Na_2CO_3 and that of calcium hydrogen carbonate is

A. $CaHCO_3$

B. $Ca(HCO_3)_2$

C. Ca_2HCO_3

D. $Ca(HCO_3)_3$

Answer:

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Excercise 1 C Correct The Following Statement

1. Correct the statement : A molecular formula represents an element.

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2. Molecular formula of water is H_2O_2.

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3. A molecule of sulphur is monoatomic.

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4. CO and Co both represent cobalt.

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5. Correct the statement : Formula of iron (III) oxide is FeO.

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6. Calculate the relative molecular mass of : Chloroform $[CHCl_3]$

[H=1,Cl=35.5 , C=12]

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7. Calculate the relative molecular mass of : Ammonium dichromate $\left[(NH_4)_2Cr_2O_7\right]$

[H=1 , N=14 , O=16, Cr=52]

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8. Calculate the relative molecular mass of $CuSO_4.5H_2O$

[At mass: C = 12, H = 1,O = 16, CI = 35.5, N = 14, Cu = 63.5, S = 32, Na = 23, K = 39, Pt =195, Ca =40, P=31, Mg = 24]

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9. Calculate the relative molecular mass of $(NH_4)_2SO_4$.

[At mass: C = 12, H = 1,O = 16, CI = 35.5, N = 14, Cu = 63.5, S =

32, Na = 23, K = 39, Pt =195, Ca =40, P=31, Mg = 24]

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10. Calculate the relative molecular mass of CH_4COONa

[At mass: C = 12, H = 1,O = 16, CI = 35.5, N = 14, Cu = 63.5, S = 32, Na = 23, K = 39, Pt =195, Ca =40, P=31, Mg = 24]

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11. Calculate the relative molecular mass of : Potassium Chlorate $[KClO_3]$

[O=16,Cl=35.5, K=39]

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12. Calculate the relative molecular mass of Ammonium chloroplatinate $(NH_4)_2PtCl_6$.

[At mass: C = 12, H = 1,O = 16, CI = 35.5, N = 14, Cu = 63.5, S = 32, Na = 23, K = 39, Pt =195, Ca =40, P=31, Mg = 24]

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13. Give the empirical formula of Benzene (C_6H_6).

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14. Give the empirical formula of Glucose $(C_6H_{12}O_6)$.

Watch Video Solution

15. Give the empirical formula of Acetylene (C_2H_2).

Watch Video Solution

16. Give the empirical formula of Acetic acid (CH_3COOH)

.

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17. Find the percentage mass of water in Epsom salt $MgSO_4.7H_2O.$

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18. Calculate the percentage of phosphorus in Calcium hydrogen phosphate $Ca(H_2PO_4)_2$.

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19. Calculate the percentage of phosphorus in Calcium phosphate $Ca_3(PO_4)_2$.

Watch Video Solution

20. Calculate the percentage composition of each element in Potassium chlorate, $KClO_3$.

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21. Urea is a very important nitrogenous fertilizer. Its formula is CON_2H_4. Calculate the percentage of carbon in urea.

(C = 12,O = 16, N = 14 and H= 1)

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Topic 1 Element Radicals And Formulae 1 Mark Questions

1. The molecular formula of ammonium sulphate is _____.

$[NH_4SO_4/(NH_4)_2SO_4]$

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2. For an element, symbol represent _____atom. [one/two]

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3. Symbol used by Berzelius for oxygen is [O] and _____ for hydrogen. [H/O]

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4. If an element shows two different positive reliances, than for the lower valency the suffix _____is used. ["ous"/"ic"]

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5. Basic radical formed by aluminium _____ $\left[Al^{2+} / Al^{3+}\right]$

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6. Latin name for tin is _____ [Stannum/Stabium]

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7. The formula for bisulphite is ____ $\left[HS^{-} / HSO_3^{-}\right]$

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8. The symbol of uranium is _____ [U/Ur]

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9. The example of compound radical is _____ $[Mg^{2+}/SO_4^{2-}]$

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10. The basic radical in potassium chloride is _____ $[K^+/Cl^-]$

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11. A carbonate that does not decompose on heating is _____ $(K_2CO_3/CaCO_3)$

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12. The formula of a compound represents

A. an atom

B. a particle

C. a molecule

D. a combination

Answer: C

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13. The correct formula of aluminium oxide is

A. AlO_3

B. AlO_2

C. Al_2O_3

D. Al_3O_2

Answer: C

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14. The valency of nitrogen in nitrogen dioxide (NO_2) is

A. One

B. two

C. three

D. four

Answer: D

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15. Match the following

	Column A		Column B
(i)	Boric acid	A.	PH_3
(ii)	Nitrous acid	B.	SiO_2
(iii)	Phosphine	C.	H_2SO_3
(iv)	Sulphuric acid	D.	H_3BO_3
(v)	Sulphurous Acid (Sand)	E.	HNO_2

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16. What is meant by atomicity ? Name a diatomic element ?

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17. Write the chemical names of the following compounds.

$Ca_3(PO_4)_2$

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18. Write the chemical names of the following compounds.

K_2MnO_4

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19. What is a symbol?

Watch Video Solution

20. Why is the symbol S for sulphur, but Na for sodium and Si for silicon ?

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21. Explain the terms 'valency' and 'variable valency'.

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22. Write the chemical formula of the sulphate of aluminium and zinc .

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23. Who proposed the method of using modern atomic symbols?

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24. What is a chemical formula?

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25. Write full form of IUPAC

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26. Name the elements represented by the following symbols : Ag,Hg

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27. Match the following

	Column A		Column B
(i)	Silica	A	$NaHCO_3$
(ii)	Caustic Soda	B	SiO_2
(iii)	Washing Soda	C	$NaOH$
(iv)	Baking Soda	D	$CaCO_3$
(v)	Lime Stone	E	Na_2CO_3

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Topic 1 Element Radicals And Formulae 2 Marks Questions

1. What do you understand by the following terms?

Acid radical

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2. What do you understand by the following terms?

Basic radical

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3. What is the formula of iron (III) sulphate?

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4. Chemical formula of sodium carbonate is Na_2CO_3 then what would be the formula of calcium hydrogen carbonate.

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5. Write the valency of carbon in C_2H_6 & C_2H_2

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6. Write one example of each of the following:-

Monoatomic molecules

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7. Write one example of each of the following:-

Triatomic molecules

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8. Write one example of each of the following:-

Tetra atomic molecules

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9. Write one example of each of the following:-

Octa atomic molecules

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10. Correct the following statement:

An element is represented by molecular formula.

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11. Correct the following statement:

Co and CO both represents carbon monoxide.

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12. Based on the symbols with valencies & charges write the formula of the following compounds

(i)$Mg^{2+}Cl^{-}$ (Magnesium Chloride)

(ii) $K^{+}Cr_2O_7^{2-}$ (Potassium Dichromate)

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13. Based on the symbols with valencies & charges write the formula of the following compounds

(i)$Na^{+}AlO_2^{2-}$ (Sodium aluminate)

(ii)$Ca^{2+}N^{3-}$ (Calcium nitride)

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Topic 1 Element Radicals And Formulae 3 Marks Questions

1. The formula of the chloride of a metal .M. is MCl_2. State the formula of its Carbonate

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2. The formula of the chloride of a metal .M. is MCl_2. State the formula of its Nitrate

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3. The formula of the chloride of a metal .M. is MCl_2. State the formula of its Hydroxide

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4. Complete the following table .

Acidic Radicals → Basic Radicals ↓	Chloride	Nitrate	Sulphate
Magnesium	$MgCl_2$	$Mg(NO_3)_2$	
Zinc		$Zn(NO_3)_2$	$ZnSO_4$
Potassium	KCI		K_2SO_4

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5. Identify the acidic or basic radicals in the following compounds :

Acidic radicals in $MgCO_3$

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6. Identify the acidic or basic radicals in the following compounds :

Basic Radicals in $Ag_2SO_3(I)$

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7. Identify the acidic or basic radicals in the following compounds :

Acidic Radicals in $FePO_4(III)$

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8. Write the name of the following compounds: NaClO

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9. Write the name of the following compounds: $NaClO_3$

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10. Write the name of the following compounds: $NaClO_4$

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11. Identify the symbol

N

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12. Identify the symbol

N_2

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13. Identify the symbol

$2N_2$

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14. Give the formula of :

	Formula	Valency
(1) Oxalate	_____	_____
(2) Chromate	_____	_____
(3) Phosphide	_____	_____

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15. What is the valency of N in following compounds.

N_2O_3

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16. What is the valency of N in following compounds.

NO_2

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17. What is the valency of N in following compounds.

N_2O_5

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18. Give the example of Trivalent electropositive ion

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19. Give the example of Trivalent electronegative ion

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20. Give the example of Divalent electropositive ion

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21. Write the formula for :

Sodium bisulphate : .....

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22. Give the formulae of Ammonium nitrate

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23. Give the formulae of Magnesium nitride

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Topic 1 Element Radicals And Formulae 5 Marks Questions

1. What are poly atomic ions? Give two examples?

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2. What is the valency of Fluorine in CaF_2

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3. What is the valency of Sulphur in SF_6

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4. What is the valency of Carbon in CH_4

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5. Write the chemical name of the following compounds

$Mn_3(BO_3)_2$

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6. Write the chemical name of the following compounds

$Na_4Fe(CN)_6$

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7. Write the chemical name of the following compounds

$Ba(ClO_3)_6$

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8. Write the chemical name of the following compounds

Ag_2SO_3

Watch Video Solution

9. Write the chemical name of the following compounds

$KMnO_4$

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10. Select the basic and acidic radicals in the $MgSO_4$.

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11. Select the basic and acidic radicals in the following compounds

$(NH_4)_2SO_4$

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12. Select the basic and acidic radicals in the $Al_2(SO_4)_3$.

Watch Video Solution

13. Select the basic and acidic radicals in the following compounds

$ZnCO_3$

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14. Select the basic and acidic radicals in the following compounds

$Mg(OH)_2$

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15. Complete the following table .

Acidic Radicals → Basic Radicals ↓	Chloride	Nitrate
Magnesium	$MgCl_2$	$Mg(NO_3)_2$
Sodium		
Zinc		
Silver		
Ammonium		
Calcium		

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Topic 2 Balancing Of Simple Chemical Equations Relative Atomic And Molecular Masses 1 Mark Questions

1. Define atomic mass unit.

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2. Give the empirical formula of Benzene (C_6H_6).

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3. What is the empirical formula of $C_6H_{12}O_6$

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4. Give the empirical formula of Acetic acid (CH_3COOH).

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5. Name the fundamental law that is involved in every equation.

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Topic 2 Balancing Of Simple Chemical Equations Relative Atomic And Molecular Masses 2 Marks Questions

1. What is the empirical formula mass ? What is empirical formula mass of H_2O_2

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2. In a reaction between NaCl and $AgNO_3$ which results in formation of AgCl & $NaNO_3$, find the weight of reactants & products.

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3. Calculate the percentage of nitrogen in ammonium nitrate. $[NH_4NO_3]$ [N=14 , H=1, O=16]

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4. Find the percentage of Phosphorus in Calcium hydrogen Phosphate

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5. Calculate the percentage of phosphorus in Calcium phosphate $Ca_3(PO_4)_2$.

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6. Find the percentage of oxygen in CO_2 [C = 12,O = 16]

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7. Balance each of the chemical equations given below :

$FeCl_3 + NH_4OH \rightarrow NH_4Cl + Fe(OH)_3$

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8. Balance each of the chemical equations given below :

$Kl + Cl_2 \rightarrow KCl + I_2$

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9. Balance each of the chemical equations given below :

$NaOH + H_2SO_4 \rightarrow Na_2SO_4 + H_2O$

Watch Video Solution

10. Balance each of the chemical equations given below :

$Fe + H_2SO_4 \rightarrow FeSO_4 + H_2$

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11. Calculate the relative molecular mass of : Ammonium dichromate $\left[(NH_4)_2Cr_2O_7\right]$

[H=1 , N=14 , O=16, Cr=52]

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12. Calculate the relative molecular mass of $CuSO_4.5H_2O$

[At mass: C = 12, H = 1,O = 16, CI = 35.5, N = 14, Cu = 63.5, S = 32, Na = 23, K = 39, Pt =195, Ca =40, P=31, Mg = 24]

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13. Calculate the relative molecular mass of : Potassium Chlorate $[KClO_3]$

[O=16,Cl=35.5, K=39]

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14. Calculate the relative molecular mass of : Chloroform $[CHCl_3]$

[H=1,Cl=35.5 , C=12]

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15. Balance the following equations

$As_2O_3 + SnCl_2 + HCl \rightarrow SnCl_4 + As + H_2O$

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16. Balance the following equations

$K_2Cr_2O_7 + HCl \rightarrow KCl + CrCl_3 + H_2O + Cl_2$

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17. Balance the chemical equations

$PbO + NH_3 \rightarrow Pb + H_2O + N_2$

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18. Balance the chemical equations

$$S + HNO_3 \rightarrow H_2SO_4 + NO_2 + H_2O$$

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19. Complete and balance the following reactions :

$$Fe_2O_3 + H_2 \xrightarrow{\Delta} \text{.....} + \text{.....}$$

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20. Complete and balance the following reactions :

$$CH_2 = CH_2 + H_2 \rightarrow \text{.....}$$

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21. Write balanced equations of the following :

Aluminium Sulphate + Sodium hydroxide $\rightarrow$ Aluminium hydroxide +Sodium Sulphate

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22. Write balanced equations of the following :

Silver nitrate $\rightarrow$ silver + nitrogen dioxide + oxygen

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23. Calculate the molecular mass of ammonium carbonate $\left[(NH_4)_2CO_3\right]$

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Topic 2 Balancing Of Simple Chemical Equations Relative Atomic And Molecular Masses 3 Marks Questions

1. Balance the following equations

$Ca + N_2 \rightarrow Ca_3N_2$

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2. Balance the following equation :

$Zn + KOH \rightarrow K_2ZnO_2 + H_2$

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3. Balance the following equations

$Fe_2O_3 + CO \rightarrow Fe + CO_2$

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4. Write balanced chemical equations for each of the following

$Cl_2 + KBr \rightarrow KCl + Br_2$

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5. Write balanced chemical equations for each of the following

$Fe + CuSO_4 \rightarrow FeSO_4 + Cu$

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6. Write balanced chemical equations for each of the following

$Al + NaOH + H_2O \rightarrow NaAlO_2 + H_2$

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7. Balance the chemical equations :

$K_2CO_3 + H_2SO_4 \rightarrow K_2SO_4 + CO_2 + H_2O$

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8. Balance the chemical equations :

$Cl_2 + SO_2 + H_2O \rightarrow H_2SO_4 + HCl$

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9. Balance the chemical equations :

$AgNO_3 \rightarrow Ag + NO_2 + O_2$

Watch Video Solution

10. Balance the equations given below :

$ZnS + O_2 \rightarrow ZnO + SO_2$

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11. Balance the equations given below :

$K_2Cr_2O_7 + H_2SO_4 + SO_2 \rightarrow K_2SO_4 + Cr_2(SO_4)_3 + H_2O$

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12. Balance the equations given below :

$Pb(NO_3)_2 \xrightarrow{\text{heat}} PbO + NO_2 + O_2$

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13. Write balanced chemical equations for each of the following :

Reaction of iron with chlorine

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14. Write balanced chemical equations for each of the following :

Addition of silver nitrate solution to sodium chloride solution.

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15. Write balanced chemical equations for each of the following :

Addition of zinc to sodium hydroxide solution.

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16. Deduce the mass percentage of water in $MgSO_4.7H_2O$ (Epsom salt)

Atomic masses of Mg = 24 , S= 32 , O=16 , H=1

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17. Calculate the percentage mass of water in crystals of washing soda.

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18. Write balanced chemical equation for each of the following :

Aluminium carbide + water $\rightarrow$ Aluminium hydroxide + Methane

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19. Write balanced chemical equation for each of the following :

Iron Pyrites (FeS_2) + Oxygen $\rightarrow$ Ferric Oxide + Sulphur dioxide

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20. Write balanced chemical equation for each of the following :

Potassium permanganate + hydrochloric acid $\rightarrow$

Potassium Chloride + Manganese Chloride +Chlorine +Water

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21. Write balanced chemical equation for each of the following :

Ammonia reacts with Oxygen

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22. Write balanced chemical equation for each of the following :

Copper reacts with Nitric acid

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23. Write balanced chemical equation for each of the following :

Lead sulphide reacts with Oxygen

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24. Urea is a very important nitrogenous fertiliser. Its formula is CON_2H_4. Calculate the percentage of nitrogen in urea. (C = 12, O = 16, N = 14 and H = 1)

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25. Calculate the percentage of nitrogen in urea NH_2CONH_2.

Given : R.M.M. of N = 14, C = 12 , O = 16, H = 1 ?

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26. Calculate the percentage of water molecules in hydrated calcium sulphate .

[Ca=40 , S=32 , O=16 , H=11]

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Topic 2 Balancing Of Simple Chemical Equations Relative Atomic And Molecular Masses 5 Marks Questions

1. Calculate the percentage composition of various elements in :

Sodium carbonate, Na_2CO_3

Given that the relative atomic masses of O = 16, Na = 23 and C = 12.

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2. Write the balanced chemical equation of the following word equation.

Sodium chloride + manganese dioxide + sulphuric acid $\rightarrow$ sodium hydrogen sulphate + manganese sulphate + water + chlorine

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3. Explain the balancing of the given equation by hit and trial method.

$As_2O_3 + SnCl_2 + HCl \rightarrow SnCl_4 + As + H_2O$

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4. Calculate the relative molecular masses (or molecular weights) of the following compounds: Ammonium sulphate, $(NH_4)_2SO_4$

Given that the relative atomic masses (in amu) of Cu = 63.5, S = 32, O = 16, N= 14 and C = 12

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5. Calculate the relative molecular masses (or molecular weights) of the following compounds : Cane sugar , $C_{12}H_{22}O_{11}$

Given that the relative atomic mass (in amu) of Cu = 63.5 , S=32 , O=16 , N=14 , C=12

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6. Calculate percentage of hydrogen in water

Given that the relative atomic masses in amu of H = 1, 0 = 16.

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7. Calculate the percentage composition of various elements in :

Sodium carbonate, Na_2CO_3

Given that the relative atomic masses of O = 16, Na = 23 and C = 12.

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8. Give the empirical formula of acetylene (C_2H_2)

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